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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------------|------------------------|
| 10/718,567 | 11/24/2003 | Yin-Chun Huang | 030113 | 1877 |
| 43831 7590 07/31/2007 BERKELEY LAW & TECHNOLOGY GROUP, LLP 17933 NW Evergreen Parkway, Suite 250 BEAVERTON, OR 97006 | | | EXAMINER PUNNOOSE, ROY M | |
| | | | ART UNIT 2886 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/718,567

Applicant(s)

HUANG ET AL.

Examiner

Roy M. Punnoose

Art Unit

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 9-11 is/are allowed.
- 6) ☒ Claim(s) 12-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to applicant's amendment of 10/30/2006, the Examiner forwarded an office action on 01/29/2007 indicating that the scope of the claims have been changed, and required the applicant to correct it in 30 days time. As a result of discussions with the applicant on February 16, 2007 and March 29 2007, the Examiner has decided to forgo the above requirement. The applicant has cancelled claims 7 and 8. Claims 1-6 and 9-40 are currently pending in the application.

Examiner's Remarks

2. Since the applicant is claiming "an apparatus" in claims 1-6 and 9-30, it should be noted that if the prior art structure is capable of performing the intended use, then it meets the claim. If the prior art apparatus in any field of endeavor has a structure that is similar to the applicant's claimed structure, then it meets the claim.

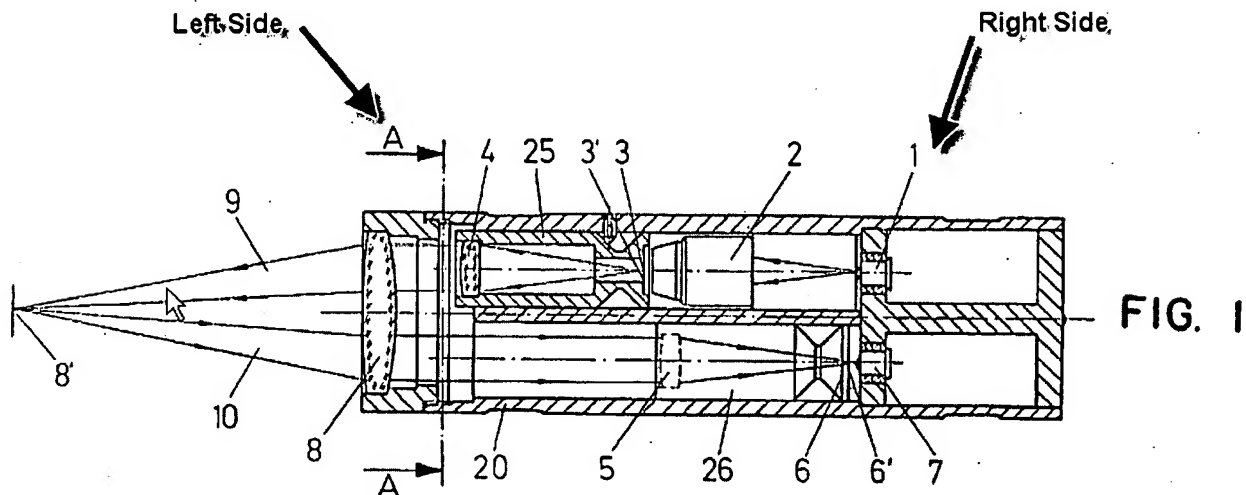
Response to Applicant's Remarks

3. With respect to the "claim objections" and 35 USC 101 and 112 rejections, the applicant's remarks, filed on 07/10/2006, have been accepted and therefore all related rejections have been withdrawn.

4. In the "remarks" section, the applicant's argues that the Examiner has not established that Roussel discloses "a point light source, disposed at a first end of said holder; a photodetector, disposed at a second end of said holder opposite said first end, said first end and said second end formed on the same side of said holder." Specifically, the Examiner has not established that the item 20 of Roussel specifically discloses first and second "ends" and a "side" as recited in claim 1.

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The Examiner agrees that Roussel does not teach disposing a point light source and a detector at the edge of the holder. However, the word "end" in its broadest sense can also mean an "end region." Therefore, when "end" is interpreted in the broadest sense, Roussel teaches disposing a point light source and a detector at the end of the holder. Further, Roussel teaches first end and said second end formed on the same side of said holder, the right side of the apparatus, as shown in the figure below.



In view of the above reasoning, the Examiner believes that the applicant has not overcome the 35 USC 102 (b) rejection of claims 12-13 and 15.

Amended claim 1 has allowable subject matter and therefore claims 1-6 and 9-11 are allowable. Since amended claim 1 has allowable subject matter, and claims 2-6 and 9-11 are dependent claims, all rejections of claims 1-6 and 9-11 have been withdrawn.

5. With regard to the rejection of claims 12-20, the applicant argues that since the Examiner has not established that the item 20 of Roussel specifically discloses first and second "ends" and

a "side" as recited in claim 1, and therefore are allowable at least on the same or similar basis as claim 12 as set forth above with respect to the anticipation rejection in view of Roussel.

However, for reasons stated in the above paragraph with regard to the "ends" and "side" limitations of claim 1, the applicant has not overcome the rejections of claims 12-20.

The applicant further stated that the "Assignee respectfully submits that claims 13-40 are similarly not obvious, at least on the same or similar basis as claim 12 as set forth above with respect to the anticipation rejection in view of Roussel."

However, since the limitations of claims 21-40 are similar to that of claims 12-20, and since the applicant has not overcome the rejections of claims 12-20, claims 21-40 are rejected for reasons similar to the reasons for rejection of claims 12-20.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 12-13, 21-23 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Roussel (US_4,283,146).**

With regard to claims 12-13, 21-23 and 31-33, Roussel discloses an apparatus (see Figures 1 and 2) with a combination of a point light source and a single lens, comprising: a point light source/LED 1 (see col.2, line 35), a photodetector 7, and a lens 8, positioned in the same side of said point light source 1 and said photodetector 7 in order that a light emitting from said point light source 1 is focused onto a target area 8' of an object through said lens 8, and a

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reflected light from said target area 8' of said object is focused onto said photodetector 7 through said lens 8 (see col.2, lines 33 – col.6, line 43, and specifically col.2, lines 33-64), a holder 20 for holding said point light source at a first end (the first end being the left half of the holder 20 in Figures 1 and 2), and holding said photodetector at a second end (the second end being the right half of the holder 20 in Figures 1 and 2), said first end and said second end formed on the same side of said holder 20 (see Figure 1), wherein said object is placed at a focal position 8' of said lens 8 (see col.2, lines 63-64) and the photodetector is a photodiode 7 (see col.2, lines 40-42).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 14-19, 24-29 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roussel (US_4,283,146) in view of Phillips et al (US_5,059,394).**

10. Claims 14, 24 and 34 are rejected because:

A. Roussel teaches all claim limitations as disclosed above and further teaches

detecting/measuring reflectance and/or color (see col.6, lines 14-23) with an apparatus for detecting a small-size object or a small target area on said object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

- B. However, Roussel does not explicitly teach that the photodetector generates a response current in response to reflected light from a target area of an object in an apparatus for detecting a small-size object or a small target area on said object for quantification said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- C. Phillips et al (Phillips hereinafter) discloses an apparatus in which the photodetector generates a response current in response to reflected light (see col.7, lines 48-61, and particularly lines 57-59) from a target area 14 of an object 12 (see col.5, lines 38-41 and Figure 1), said apparatus for quantification of light reflective characteristics of said target area on the object from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- D. In view of Phillips' teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate generating a response current in response to reflected light from a target area of an object into Roussel's apparatus due to the fact that such incorporation would provide a more accurate apparatus for detecting a small-size object or a small target area on an object because current driven circuits are less susceptible to noise from the immediate surroundings of said apparatus for quantification the object's light reflective characteristics, from which other characteristics such as color or substance or the content of the object or the target area can be determined.
11. Claims 15, 25 and 35 are rejected for the same rational for rejecting claims 12, 21 and 31 above, and because Roussel teaches the use of a photodiode for detecting light (se col.2, line 41).

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12. Claims 16, 26 and 36 are rejected for the same rational for rejecting claims 12, 21 and 31 above, and additionally because:

- A. Roussel teaches all claim limitations as disclosed above and further teaches detecting/measuring reflectance and/or color (see col.6; lines 14-23) with an apparatus for detecting a small-size object or a small target area on said object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- B. However, Roussel does not teach of an object which includes a test strip having a light-absorbing area occurring in response to a specific component of a tested solution contacting therewith and capable of absorbing light emitting from a point light source, in an apparatus for detecting a small target area on said object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- C. Phillips discloses an apparatus/system comprising an object/test strip 12 having a light-absorbing area 14 occurring in response to a specific component of a tested solution contacting therewith and capable of absorbing light emitting from a point light source/LED (see abstract, col.3, line 24 – col.21, line 43, and specifically col.7, lines 48-53 and col.10, lines 30-68), in an apparatus for detecting a small target area on said object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

D. In view of Phillips' teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an object which includes a test strip having a light-absorbing area occurring in response to a specific component of a tested solution contacting therewith and capable of absorbing light emitting from a point light source into Roussel's apparatus due to the fact that such incorporation would provide an apparatus with more measurement/detection functions for measuring/detecting a small-size object or a small target area on an object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

13. Claims 17-19, 27-29 and 37-39 are rejected for the same rational for rejecting claims 12 and 16 above, and additionally because:

A. Roussel teaches all claim limitations as disclosed above and further teaches detecting/measuring reflectance and/or color (see col.6, lines 14-23) with an apparatus for detecting a small-size object or a small target area on said object for quantification of said object's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

B. However, Roussel does not teach of a specific component of a tested solution to be detected depends on an enzyme system contained in a test strip and that the test strip is used for monitoring a concentration of glucose in a blood sample in an apparatus for detecting a small target area on an object for quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

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- C. Phillips discloses that a specific component of a tested solution to be detected depends on an enzyme system contained in a test strip and that the test strip is used for monitoring a concentration of glucose in a blood sample (see col.3, lines 44-54; col.8, lines 51-55 and specifically lines 54-55) in an apparatus for detecting a small target area on an object for quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- D. In view of Phillips' teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate detecting a specific component of a tested solution wherein detection depends on an enzyme system contained in a test strip and that the test strip is used for monitoring a concentration of glucose in a blood sample into Roussel's apparatus due to the fact that such incorporation would provide an apparatus with more measurement/detection functions for detecting a small target area on an object for quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

Note: With regard to claims 17, 27 and 37, the recitation that the "point light source is capable of radiating a light with a first wavelength and a light with a second wavelength," it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation, but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

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14. **Claims 20, 30 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roussel (US_4,283,146) in view of Phillips et al (US_5,059,394) and further in view of Markart et al (US_5,281,395).**

15. Claims 20, 30 and 40 are rejected for the same rational for rejecting claims 12, 16 and 18 above, and additionally because:

- A. Roussel and Phillips teach all claim limitations as disclosed above.
- B. However, Roussel and Phillips do not teach of a test strip that is used for monitoring a concentration of cholesterol in a blood sample in an apparatus for detecting a small target area on an object for quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- C. Markart et al (Markart hereinafter) teaches prior art disclosure of a test strip that is used for monitoring a concentration of cholesterol in a blood sample (see col.1, lines 45-53 and specifically lines 47 and 50) in an apparatus for detecting a small target area on an object for quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.
- D. In view of Markart's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an object having a test strip that is used for monitoring a concentration of cholesterol in a blood sample into Roussel's apparatus due to the fact that such incorporation would provide an apparatus with more measurement/detection functions for detecting a small target area on an object for

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quantification of said object's/target area's light reflective characteristics from which other characteristics such as color or substance or the content of the object or the target area can be determined.

Allowable Subject Matter

16. Claims 1-6 and 9-11 are allowable.

17. Claim 1 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus in which sampling amount of tested solution is determined in accordance with the reflectance of light with the first wavelength from a light-absorbing area, and light with the second wavelength absorbed by said light-absorbing area occurring in response to a specific component of said tested solution, wherein a content of said specific component is determined in accordance with the reflectance of said light with the second wavelength from said light-absorbing area, in combination with the rest of the limitations of claim 1.

18. Claims 2-6 and 9-11 are allowable because they are dependent on claim 1, or an intermediate claim and they include all the limitations of their parent claim(s).

Pertinent Prior Art

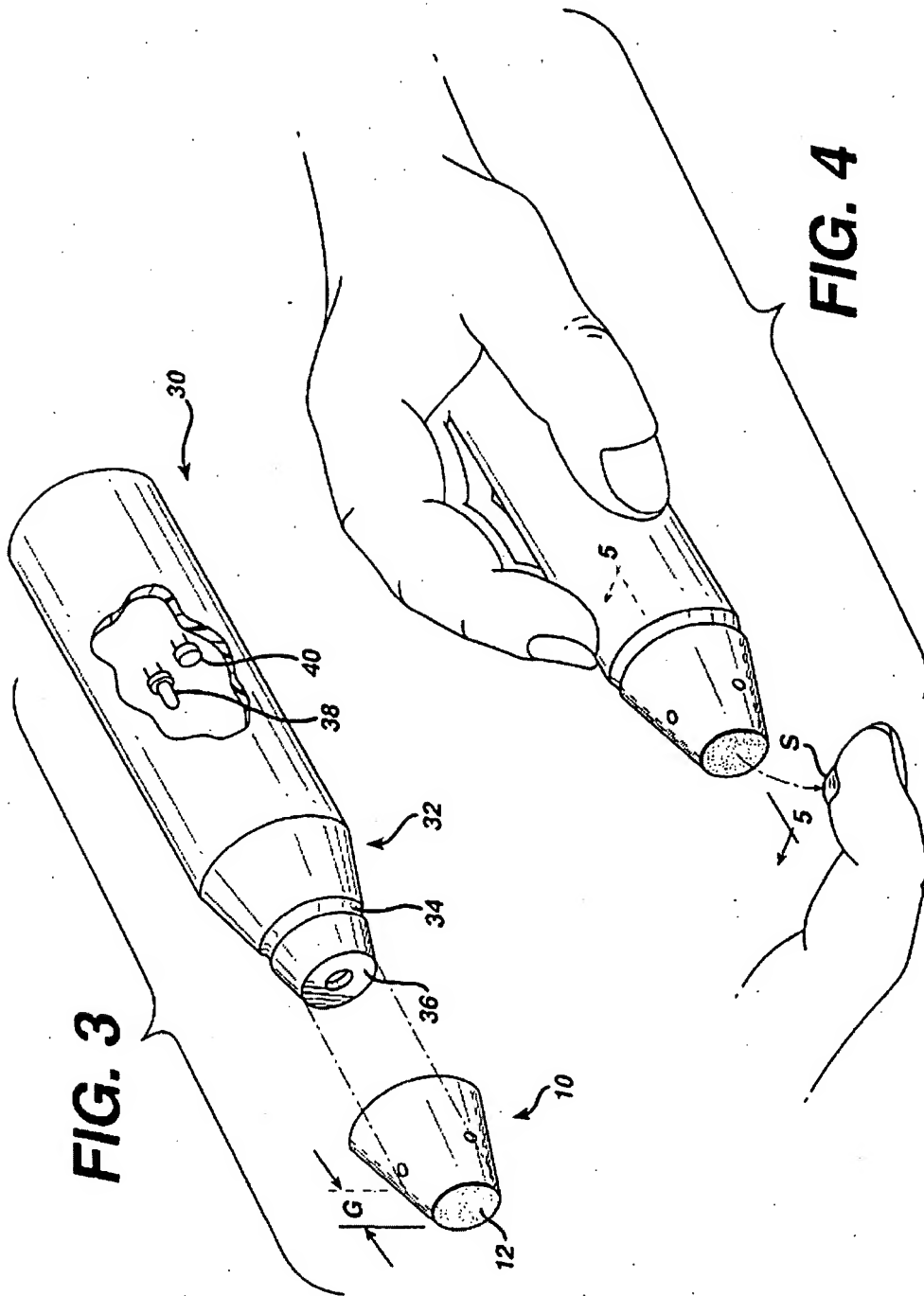
19. Below are some of the prior art documents that teach an apparatus with a combination of a point light source and a single lens, comprising a point light source, a photodetector; and a lens positioned in the same side of said point light source, among other relevant limitations.

U.S. Patent

Dec. 8, 1998

Sheet 2 of 10

5,846,486



U.S. Patent

Mar. 1, 1988

Sheet 1 of 2

4,728,196

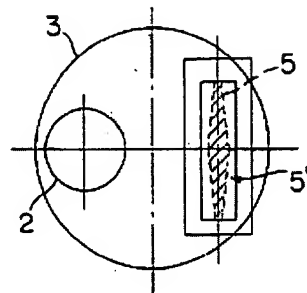


FIG. 2

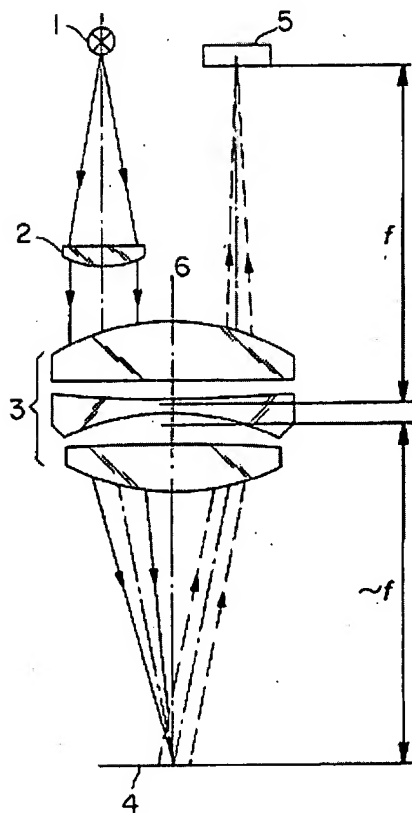


FIG. 1

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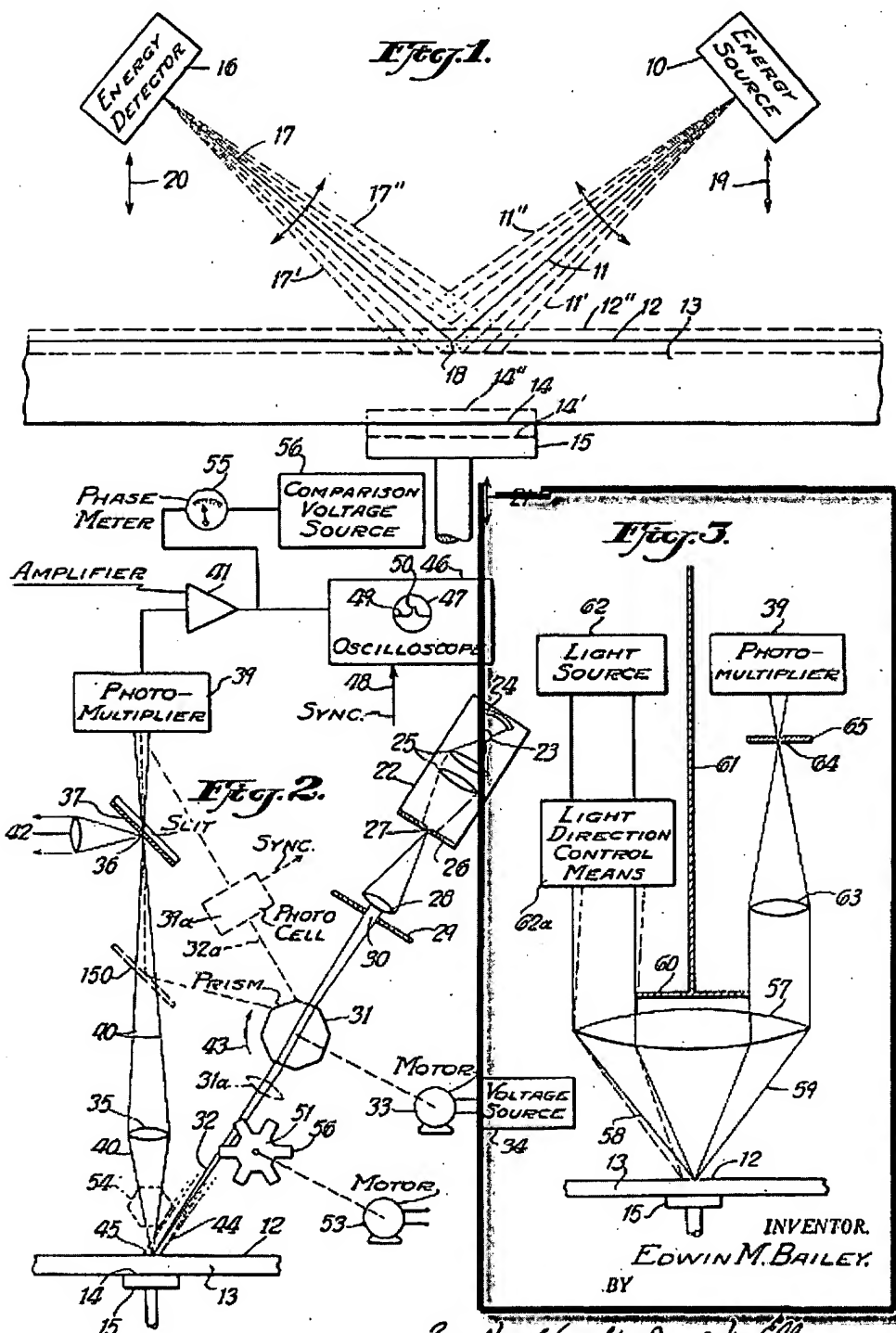
Jan. 9, 1962

E. M. BAILEY
APPARATUS FOR DETERMINING THE LOCATION AND
THICKNESS OF A REFLECTING OBJECT

3,016,464

Filed June 10, 1959

5 Sheets-Sheet 1



Ward & Hasselton Orme & McElhannon
ATTORNEYS.

U.S. Patent

Nov. 8, 1994

Sheet 3 of 4

5,362,953

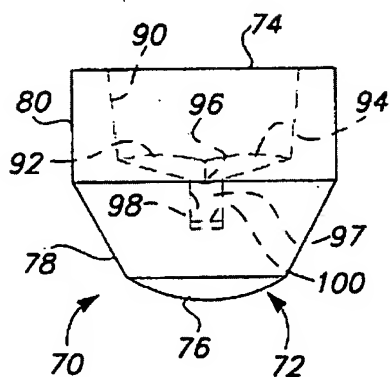


FIG. 6

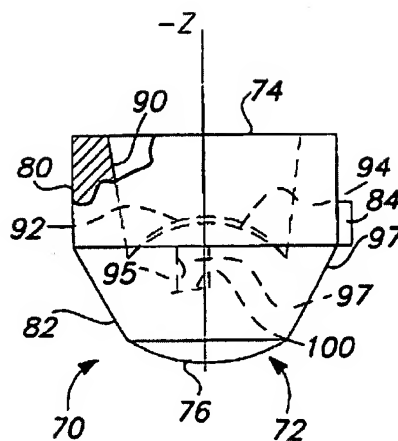


FIG. 7

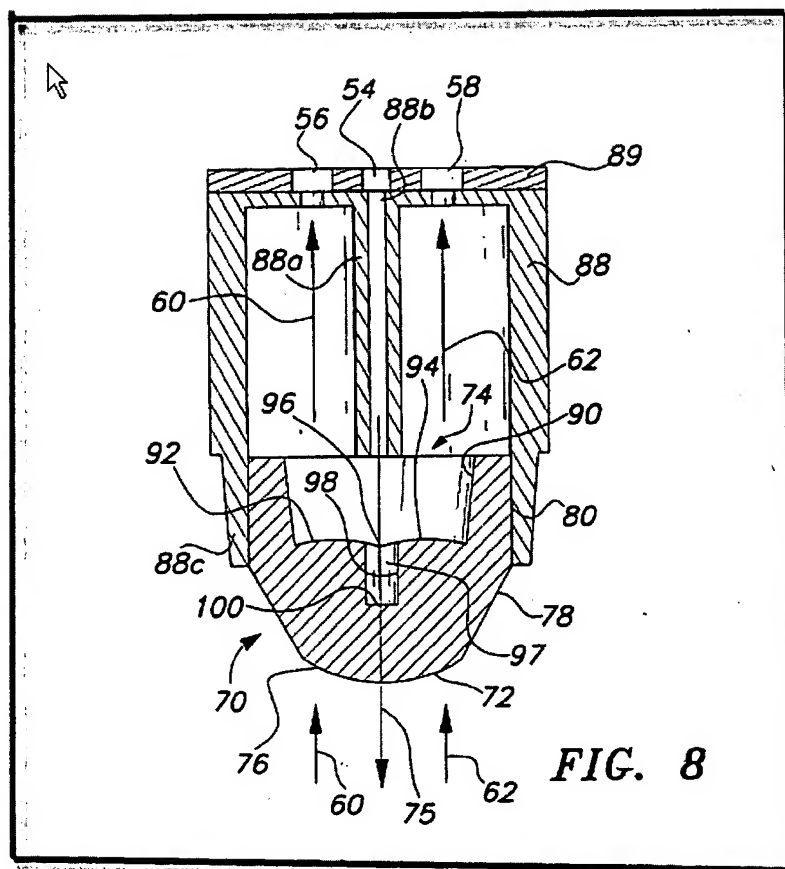


FIG. 8

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Contact/Status Information

20. The prior art cited in the accompanying **PTO-892** is made of record and not relied upon, **is considered pertinent** to applicant's disclosure.

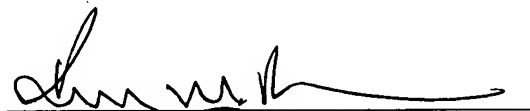
21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Roy M. Punnoose** whose telephone number is **571-272-2427**.

The examiner can normally be reached on 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tarifur Chowdhury** can be reached on **571-272-2287**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 17, 2007



Roy M. Punnoose
Primary Patent Examiner
Art Unit 2886